

AMENDMENTS TO THE CLAIMS

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1. (Canceled)
2. A power steering pump in accordance with claim 11 wherein the flow control valve slides axially to vary the size to the inlet and to regulate fluid flow into the fluid bypass port.
3. (Canceled)
4. A power steering pump in accordance with claim 11 wherein the spring urges the flow control valve to open the inlet of the bypass port.
5. A power steering pump in accordance with claim 11 further comprising pumping elements disposed within the housing, said pumping elements comprising a cam chamber and a rotor having retractable vanes disposed within the cam chamber.
6. (Canceled)
7. (Currently Amended) A power steering pump in accordance with claim 12 further comprising:  
pumping elements located within the housing and communicating with the fluid bypass port, for pumping fluid to the fluid discharge port, wherein the pumping elements comprise a cam chamber and a rotor having retractable vanes disposed within the cam chamber.
8. A power steering pump in accordance with claim 12 wherein the spring urges the flow control valve to open the inlet of the bypass port.
9. (Canceled)

10. A power steering pump in accordance with claim 13 wherein the sleeve includes an end cap, and wherein plunger includes a rear end adjacent the end cap and a pressure equalization passage extending from the rear end and communicating through the hollow rod with the bore.

11. (currently amended) A power steering pump comprising:  
a housing including a bore having an axis, ~~a first bore end and a second bore end, the housing including~~ a fluid discharge port communicating with the bore at a first axial location, a fluid bypass port communicating with the bore at a second axial location and including an inlet, through which fluid enters the bypass port from the bore ~~communicating with the bore at a second axial location~~, and an fluid outlet passage communicating with the fluid discharge port and the bore ~~and located at the first end~~;

a flow control valve located in the bore and axially displaceable along the axis for opening and closing the inlet to open the inlet, to close the inlet, and to adjust the size of the inlet through which flow can enter the bypass port from the bore;

a sleeve secured to the housing at the second bore end and extending along the axis away from the housing;

a plunger secured to the valve located in within the sleeve and axially displaceable along the axis;

a spring including a first end and a second end axially opposite the first end, ~~located in the sleeve~~, seated against axial displacement relative to the housing at the first end and seated against the plunger at the second end; and

an electromagnetic coil for actuating the plunger to move the flow control valve along the axis at the inlet.

12. (currently amended) A power steering pump comprising:  
a housing including a bore having an axis, ~~a first bore end and a second bore end, the housing including~~ a fluid discharge port communicating with the bore at a

first axial location, a fluid bypass port communicating with the bore at a second axial location and including an inlet, through which fluid enters the bypass port from the bore communicating with the bore at a second axial location, and an fluid outlet passage communicating with the fluid discharge port and the bore and located at the first end;

pumping elements located within the housing and communicating with the fluid bypass port, for pumping fluid to the fluid discharge port;

a flow control valve located in the bore and axially displaceable along the axis for opening and closing the inlet to open the inlet, to close the inlet, and to adjust the size of the inlet through which flow can enter the bypass port from the bore;

a sleeve secured to the housing at the second bore end and extending along the axis away from the housing;

a spring including a first end and a second end axially opposite the first end, located in the sleeve, seated against axial displacement relative to the housing at the first end and seated against the actuator at the second end;

an electromagnetic coil for producing an electromagnetic field; and

a plunger contacting the flow control valve, located within the sleeve, and axially displaceable along the axis in response to the electromagnetic field and a force produced by the spring, for moving the flow control valve along the axis.

a plunger for moving the flow control valve along the axis at the inlet, the plunger being secured to the flow control valve and axially displaceable along the axis in response to the electromagnetic field and a force produced by the spring, there being no differential pressure across the plunger tending to displace the plunger axially.

13. (currently amended) A power steering pump comprising:

a housing including a bore having an axis, a first bore end and a second bore end, the housing including a fluid discharge port communicating with the bore at a first axial location, a fluid bypass port communicating with the bore at a second axial location and including an inlet, through which fluid enters the bypass port from the

bore communicating with the bore at a second axial location, and an fluid outlet passage communicating with the fluid discharge port and the bore and located at the first end;

a flow control valve located in the bore and axially displaceable along the axis to open the inlet, to close the inlet, and to adjust the size of the inlet through which flow can enter the bypass port from the bore;

a bracket secured to the second bore end and formed with an axial passage and a second bore;

a sleeve secured to the bracket, located in the second bore, and extending along the axis away from the housing;

a hollow rod secured to the flow control valve, extending through the axial passage of the bracket and into the sleeve, providing an annular space between the sleeve and a radial outer surface of the rod;

a plunger secured to the valve located in within the sleeve, contacting an axial end of the rod, and axially displaceable along the axis;

a spring including a first end and a second end axially opposite the first end, located in the annular space, the first end resisted by the housing seated on the bracket against axial displacement relative to the housing and seated against the plunger at the second end; and

an electromagnetic coil for producing an electromagnetic field tending to close the inlet of the bypass port, the plunger being axially displaceable along the axis in response to the electromagnetic field and a force produced by the spring tending to open the inlet of the bypass port for moving the flow control valve with respect to the inlet.

14. The power steering pump of claim 13 further comprising pumping elements disposed within the housing, said pumping elements comprising a cam chamber and a rotor having retractable vanes disposed within the cam chamber.

15. (new) The power steering pump of claim 13 further comprising:  
a bracket secured to the housing and formed with an axial passage and a second bore, the spring contacting the sleeve;  
a sleeve secured to the bracket, located in the second bore, and extending along the axis away from the housing; and  
a hollow rod secured to the flow control valve, extending through the axial passage of the bracket into the sleeve, contacting the plunge, and providing an annular space between the sleeve and a radial outer surface of the rod, the spring being located in the annular space.

16. (new) A power steering pump in accordance with claim 12 wherein the electromagnetic field urges the flow control valve to close the inlet of the bypass port, and the spring urges the flow control valve to open the inlet of the bypass port.